

SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

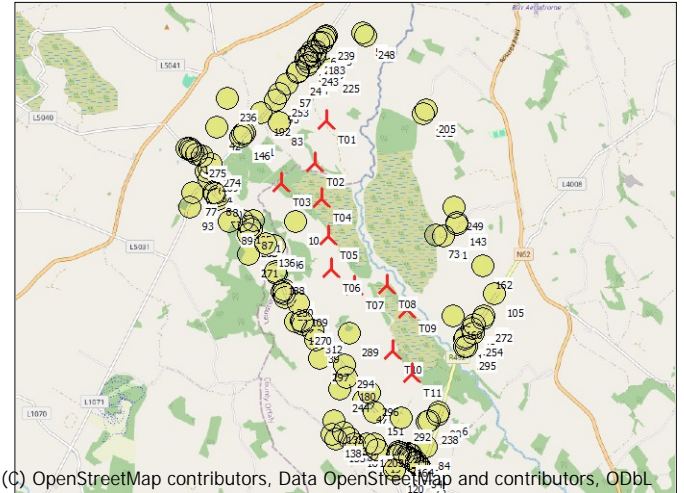
Minimum sun height over horizon for influence 3 °
Day step for calculation 1 days
Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) [BIRR]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1.57 2.08 2.82 4.36 5.20 4.37 4.15 3.90 3.54 2.68 1.94 1.23

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
311 366 409 233 635 929 1,134 1,445 1,374 903 619 401 8,759

Line-of-sight calculation has been deactivated. This means that sheltering from obstacles, areas or hills are not taken into account.

All coordinates are in
Irish ITM-IRENET95 (IE), geocentric, GRS80



WTGs

	Easting	Northing	Z	Row data/Description	WTG type			Shadow data				
					Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Calculation distance [m]	RPM [RPM]
T01	603,543	700,238	45.8	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T02	603,357	699,569	43.3	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T03	602,830	699,234	42.5	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T04	603,454	699,010	48.3	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T05	603,559	698,402	50.6	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T06	603,608	697,889	62.4	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T07	603,978	697,624	52.2	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T08	604,497	697,630	48.9	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T09	604,825	697,258	47.5	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T10	604,588	696,601	46.9	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7
T11	604,897	696,234	48.9	NORDEX N163/5.X 5700 163.0 IO! ...	Yes	NORDEX	N163/5.X-5,700	5,700	163.0	98.5	1,789	10.7

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
	[m]	[m]	[m]	[m]	[m]	[m]	[°]		[m]
5	602,379	698,649	55.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
8	601,756	699,097	52.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
10	603,041	698,628	54.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
14	603,228	701,251	62.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
17	605,740	696,773	63.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
24	603,073	700,992	56.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
26	605,156	695,456	56.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
29	604,868	694,881	74.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
31	601,669	699,312	59.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
34	606,047	697,135	68.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
37	605,889	696,999	72.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
38	603,502	701,536	55.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
39	603,362	696,763	75.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
41	604,669	694,927	74.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
42	601,796	700,138	49.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
43	602,211	700,016	50.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
46	605,042	694,742	72.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
47	604,141	695,804	66.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
53	602,834	697,527	72.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
54	605,005	694,785	73.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
57	602,912	700,809	64.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
58	604,121	701,623	45.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
61	603,407	701,477	56.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

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No.	Easting	Northing	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
			[m]	[m]	[m]	a.g.l.	[°]		(ZVI) a.g.l.
						[m]			[m]
63	603,822	695,296	88.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
66	604,810	694,921	75.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
67	601,626	699,435	57.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
68	601,771	699,074	54.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
73	605,285	698,420	49.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
75	605,069	694,671	72.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
77	601,417	699,097	59.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
80	601,822	699,049	53.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
83	602,787	700,200	47.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
84	605,130	695,071	63.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
87	602,324	698,558	63.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
89	601,999	698,633	71.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
90	601,568	699,673	48.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
91	605,406	698,404	56.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
93	601,378	698,856	70.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
95	602,723	700,564	55.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
98	605,316	695,574	52.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
101	602,206	698,647	59.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
104	604,948	694,824	74.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
105	606,220	697,490	71.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
109	603,105	697,327	73.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
110	604,678	694,958	74.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
111	604,986	694,814	74.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
116	603,328	696,917	76.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
117	604,896	694,864	73.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
119	604,854	694,902	74.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
120	604,625	694,696	76.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
123	603,481	701,461	54.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
132	604,184	695,118	77.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
133	603,694	695,183	82.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
135	603,660	695,476	90.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
136	602,577	698,287	61.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
137	603,284	701,274	60.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
138	603,634	695,267	78.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
139	603,042	697,051	76.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
140	602,747	697,815	65.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
141	602,239	700,043	51.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
143	605,619	698,616	81.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
144	604,916	694,848	73.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
146	602,183	699,987	49.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
149	603,351	701,259	58.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
150	601,416	699,743	49.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
151	604,313	695,619	64.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
153	604,887	694,944	73.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
156	601,810	698,986	56.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
157	603,538	701,582	55.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
160	605,560	697,144	65.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
162	606,036	697,933	82.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
164	604,775	694,956	74.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
166	603,989	695,114	86.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
170	601,388	699,766	49.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
173	605,622	698,581	81.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
178	605,862	696,940	73.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
180	603,868	696,156	67.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
183	603,375	701,326	57.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
185	604,859	694,953	75.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
186	603,134	697,072	76.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
188	602,727	697,851	63.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
192	602,489	700,347	47.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
194	604,353	695,027	73.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
200	604,684	694,987	75.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
202	602,878	697,421	72.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
203	604,318	695,113	72.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
204	604,631	694,756	76.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0

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SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

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No.	Easting	Northing	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
			[m]	[m]	[m]	a.g.l.	[°]		(ZVI) a.g.l.
						[m]			[m]
205	605,128	700,408	48.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
210	601,319	699,799	50.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
216	605,736	696,659	59.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
218	603,177	697,008	75.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
219	603,228	701,114	56.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
221	602,342	698,518	64.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
225	603,589	701,036	53.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
236	601,963	700,578	49.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
238	605,175	695,482	55.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
239	603,520	701,559	55.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
243	603,255	701,146	58.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
244	603,750	695,992	72.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
246	602,710	698,252	55.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
248	604,164	701,581	46.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
249	605,559	698,859	83.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
250	602,860	697,495	71.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
253	602,787	700,667	59.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
254	605,882	696,859	72.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
260	604,721	694,978	74.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
261	605,768	696,807	67.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
267	601,361	699,792	49.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
269	601,669	699,483	54.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
270	603,156	697,042	75.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
271	602,308	698,126	72.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
272	606,029	697,105	68.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
274	601,696	699,551	49.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
275	601,480	699,706	50.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
279	603,301	701,323	59.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
280	602,295	698,433	66.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
282	603,915	695,202	86.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
284	603,105	701,018	55.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
285	602,872	697,545	70.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
289	603,903	696,862	64.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
292	604,724	695,526	66.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
294	603,834	696,367	69.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
295	605,770	696,658	61.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
296	604,236	695,925	64.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
297	603,439	696,465	75.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
302	605,075	700,340	48.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
306	605,332	695,616	51.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
312	603,330	696,918	76.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
314	603,211	701,211	61.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Calculation Results

Shadow receptor

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
5	40:04	123	0:33	6:26
8	25:39	85	0:34	4:29
10	139:53	186	1:06	18:02
14	0:00	0	0:00	0:00
17	83:56	182	0:46	13:18
24	33:26	58	0:43	3:42
26	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
31	14:56	59	0:29	2:25
34	27:38	126	0:27	4:24
37	39:59	149	0:31	6:19
38	0:00	0	0:00	0:00
39	21:25	119	0:25	3:27
41	0:00	0	0:00	0:00

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Project:
Ballincor Wind Farm

Description:
Proposed 11 WTG Wind Farm at Ballincor, Co. Offaly.

Licensed user:
Tobin Consulting Engineers
Block 10-4, Blanchardstown, Corporate Park
IE-DUBLIN 15
+353 1 80304 01
Samuele Pezzetta / Samuele.Pezzetta@tobin.ie
Calculated:
19/03/2026 09:10/3.6.377



SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

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No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
42	23:06	96	0:27	3:07
43	71:04	160	0:41	8:57
46	0:00	0	0:00	0:00
47	51:15	89	0:46	9:03
53	73:33	144	0:47	13:11
54	0:00	0	0:00	0:00
57	42:23	105	0:46	5:10
58	0:00	0	0:00	0:00
61	0:00	0	0:00	0:00
63	0:00	0	0:00	0:00
66	0:00	0	0:00	0:00
67	13:33	54	0:27	2:08
68	26:07	83	0:34	4:34
73	50:24	164	0:36	6:51
75	0:00	0	0:00	0:00
77	6:50	29	0:22	1:14
80	30:09	86	0:37	5:17
83	98:57	162	0:50	13:43
84	0:00	0	0:00	0:00
87	33:41	113	0:30	5:33
89	29:14	129	0:24	4:49
90	9:06	33	0:26	1:16
91	24:37	82	0:33	3:26
93	5:19	28	0:18	0:56
95	32:29	81	0:43	4:18
98	0:00	0	0:00	0:00
101	26:48	121	0:27	4:16
104	0:00	0	0:00	0:00
105	8:29	45	0:20	1:23
109	39:52	123	0:41	7:02
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
116	35:46	147	0:24	5:55
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
123	0:00	0	0:00	0:00
132	0:00	0	0:00	0:00
133	0:00	0	0:00	0:00
135	12:30	64	0:19	2:13
136	40:39	124	0:38	6:29
137	0:00	0	0:00	0:00
138	2:53	33	0:08	0:29
139	41:18	129	0:34	7:10
140	56:25	148	0:44	9:41
141	65:49	156	0:40	8:23
143	7:43	39	0:21	1:02
144	0:00	0	0:00	0:00
146	73:42	164	0:41	9:15
149	0:00	0	0:00	0:00
150	6:22	28	0:22	0:52
151	0:00	0	0:00	0:00
153	0:00	0	0:00	0:00
156	29:14	82	0:40	5:10
157	0:00	0	0:00	0:00
160	99:59	212	1:00	15:50
162	9:20	48	0:21	1:24
164	0:00	0	0:00	0:00
166	0:00	0	0:00	0:00
170	6:03	27	0:22	0:50
173	7:30	37	0:21	1:00
178	43:47	152	0:32	6:57
180	59:31	125	0:46	10:30

To be continued on next page...



Project:
Ballincor Wind Farm

Description:
Proposed 11 WTG Wind Farm at Ballincor, Co. Offaly.

Licensed user:
Tobin Consulting Engineers
Block 10-4, Blanchardstown, Corporate Park
IE-DUBLIN 15
+353 1 80304 01
Samuele Pezzetta / Samuele.Pezzetta@tobin.ie
Calculated:
19/03/2026 09:10/3.6.377

TOBIN

SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

...continued from previous page

No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
183	0:00	0	0:00	0:00
185	0:00	0	0:00	0:00
186	42:43	148	0:34	7:24
188	66:14	156	0:43	11:20
192	41:20	126	0:35	5:34
194	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
202	52:48	122	0:44	9:17
203	0:00	0	0:00	0:00
204	0:00	0	0:00	0:00
205	5:13	25	0:20	0:49
210	5:11	25	0:20	0:42
216	60:18	156	0:40	9:27
218	25:57	131	0:21	4:26
219	0:00	0	0:00	0:00
221	36:06	122	0:30	5:59
225	0:00	0	0:00	0:00
236	11:02	54	0:20	1:30
238	0:00	0	0:00	0:00
239	0:00	0	0:00	0:00
243	0:00	0	0:00	0:00
244	26:25	93	0:29	4:35
246	58:31	125	0:45	9:22
248	0:00	0	0:00	0:00
249	9:16	36	0:19	1:01
250	72:51	138	0:48	12:59
253	27:52	59	0:44	3:49
254	44:36	152	0:31	7:15
260	0:00	0	0:00	0:00
261	75:40	185	0:42	12:07
267	5:41	26	0:21	0:46
269	15:24	61	0:30	2:22
270	34:01	142	0:27	5:51
271	24:38	118	0:26	3:58
272	28:43	124	0:27	4:34
274	16:57	60	0:31	2:30
275	7:18	30	0:24	1:00
279	0:00	0	0:00	0:00
280	33:15	120	0:28	5:36
282	0:00	0	0:00	0:00
284	24:53	48	0:39	2:42
285	80:45	146	0:49	14:26
289	79:25	170	0:51	12:26
292	0:00	0	0:00	0:00
294	53:26	115	0:48	9:20
295	59:55	158	0:39	9:25
296	77:21	109	0:55	13:49
297	23:57	106	0:27	4:13
302	5:55	26	0:21	0:56
306	0:00	0	0:00	0:00
312	35:55	147	0:24	5:56
314	0:00	0	0:00	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
T01	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (46)	203:55	28:44
T02	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (47)	134:29	17:54
T03	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (48)	159:08	22:14
T04	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (49)	69:35	11:43
T05	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (50)	166:06	26:26
T06	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (51)	224:30	34:41

To be continued on next page...

Project:
Ballincor Wind Farm

Description:
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Calculated:
19/03/2026 09:10/3.6.377

TOBIN

SHADOW - Main Result

Calculation: BALLINCOR - 11WTG - Shadow Model_Worst Case - N163 - 20260226

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
T07	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (52)	149:58	23:54
T08	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (53)	158:00	25:01
T09	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (54)	176:37	30:20
T10	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (55)	189:40	31:01
T11	NORDEX N163/5.X 5700 163.0 !O! hub: 98.5 m (TOT: 180.0 m) (56)	222:01	35:23

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.